REMARKS

The Office Action dated September 7, 2006, and the patents cited therein have been carefully reviewed, and in view of the above changes and following remarks reconsideration and allowance of all the claims pending in the application are respectfully requested.

Amendments To The Claims

Applicant has amended claims 1 and 23 to better distinguish over the applied patents by respectively including limitations contained in original claims 6 and 26, and claims 6 and 26 have been accordingly canceled. Additionally, claims 7 and 27 have been amended to change their respective claim dependency from claims 6 and 26 to claims 1 and 23.

The Rejection Under 35 U.S.C. §§ 102(e) and 103(a) Over Ravelosona-Ramasitera

Claim 1-6, 8, 11, 14-16, 13-26, 28 and 29 stand rejected under 35 U.S.C. §§ 102(e) and 103(a) as anticipated by or, in the alternative, as obvious over Ravelosona-Ramasitera et al. (Ravelosona-Ramasitera), U.S. Patent No. 6,605,321.

Applicant respectfully traverses this rejection. Applicant respectfully submits that the subject matter according to any of claims 1-5, 8, 11, 14-16, 13-25, 28 and 29 is not anticipated by and is patentable over Ravelosona-Ramasitera.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in Applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (See MPEP, § 706.02(j).)

In this particular instance, the Examiner asserts at page 3, lines 11-15, that Ravelosona-Ramasitera

> teaches that the magnetic anisotropy of the film is 'perfectly homogeneous' which indicates that grain are uniformly transformed into a ferromagnetic material (col. 6, lines 45-49). Because these grains are adjacent to one another and formed by substantially the same method as claimed, one of ordinary skill in the art would expect them to exhibit ferromagnetic exchange coupling.

At best, Ravelosona-Ramasitera generally discloses a method for enabling a material to be caused to change from one phase to a more ordered phase by irradiating a material by low energy ions having an energy of the order of one or two hundred keV. (See Ravelosona-Ramasitera, column 2, lines 9-11.) Further, Ravelosona-Ramasitera discloses a specific example of using "low energy ions, such as He ions accelerated in a focused ion beam with an energy 130 keV." (See Ravelosona-Ramasitera, column 4, lines 25-26.) Thus, the acceleration voltage range disclosed by Ravelosona-Ramasitera is an acceleration voltage range outside of the claimed acceleration voltage range. Further still, Ravelosona-Ramasitera is completely silent regarding the material property of exchange coupling. Consequently, Applicant respectfully traverses the Examiner's conclusion that "one of ordinary skill in the art would expect them to exhibit ferromagnetic exchange coupling" and respectfully invites the Examiner to identify a proper basis in Ravelosona-Ramasitera for the Examiner's conclusion other than the apparent reliance on Applicant's disclosure for the basis for the Examiner's conclusion.

Regarding claim 1, Applicant respectfully submits that Ravelosona-Ramasitera does not disclose or suggest a method comprising irradiating the claimed magnetic medium with ions having an acceleration voltage of between 10 keV and 100 keV to induce exchange coupling between grains of the magnetic medium. As already demonstrated, Ravelosona-Ramasitera only generally discloses irradiating a "material by low energy ions having an energy of the order of one or two hundred keV." (See Ravelosona-Ramasitera, column 2, lines 9-11.) Additionally, Ravelosona-Ramasitera discloses a specific example of using "low energy ions, such as He ions accelerated in a focused ion beam with an energy 130 keV." (See Ravelosona-Ramasitera, column 4, lines 25-26.) Plainly, the range of acceleration voltages disclosed by Ravelosona-Ramasitera does not disclose or suggest the claimed range of between 10 keV and 100 keV.

Thus, Applicant respectfully submits that it is only by impermissible hindsight that the Examiner is able to reject claim 1 based on the Examiner's proffered reasoning. Ravelosona-Ramasitera does not suggest the subject matter of claim 1. It is only by the Applicant's disclosure that the Examiner can assert selected conclusions to make the rejection of claim 1.

It follows that claims 2-5, 8, 11, 14-16 and 13-22, which each incorporate the limitations of claim 1, are each patentable over Ravelosona-Ramasitera for at least the same reasons that claim 1 is considered patentable over Ravelosona-Ramasitera.

Regarding claim 23, Applicant respectfully submits that claim 23 is patentable over Ravelosona-Ramasitera for reasons that are similar to the reasons that claim 1 is considered patentable over Ravelosona-Ramasitera. It follows that claims 24, 25 and 28-29, which each incorporate the limitations of claim 23, are each patentable over Ravelosona-Ramasitera for at least the same reasons that claim 23 is considered patentable over Ravelosona-Ramasitera.

Consequently, Applicant respectfully requests that the Examiner withdraw this rejection and allow claims 1-5, 8, 11, 14-16, 13-25, 28 and 29.

The Rejection Under 35 U.S.C. §§ 102(e) and 103(a) Over Fullerton

Claim 1-3, 8, 14 and 16 stand rejected under 35 U.S.C. §§ 102(e) and 103(a) as anticipated by or, in the alternative, as obvious over Fullerton et al. (Fullerton), U.S. Patent No. 6,383,597.

Applicant respectfully traverses this rejection. Applicant respectfully submits that the subject matter according to any of claims 1-3, 8, 14 and 16 is not anticipated by and is patentable over Fullerton.

Regarding claim 1, Applicant respectfully submits that Fullerton does not disclose or suggest a method comprising irradiating the claimed magnetic medium with ions having an acceleration voltage of between 10 keV and 100 keV to induce exchange coupling between grains of the magnetic medium. At best, Fullerton discloses an acceleration voltage of 700 keV (see Fullerton, column 4, lines 19-20 and 35-36, and column 5, lines 26-27), which is an acceleration voltage that is even further from the claimed acceleration voltage range than the

acceleration voltage range disclosed by Ravelosona-Ramasitera. Further, Fullerton is silent regarding the concept of exchange coupling.

Thus, claim 1 is patentable over Fullerton. It follows that claims 2, 3, 8, 14 and 16, which each incorporate the limitations of claim 1, are each patentable over Fullerton for at least the same reasons that claim 1 is considered patentable over Fullerton.

Consequently, Applicant respectfully requests that the Examiner withdraw this rejection.

The Rejection Under 35 U.S.C. § 103(a) Over Ravelosona-Ramasitera

Claims 7 and 27 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Ravelosona-Ramasitera.

Applicant respectfully traverses this rejection. Applicant respectfully submits that the subject matter according to either of claims 7 and 27 is patentable over Ravelosona-Ramasitera.

As with claims 1 and 23, Applicant respectfully submits that the Examiner has not established a *prima facie* case of obviousness for either of claims 7 and 27. Applicant respectfully submits that the Examiner's contention that "it would have been an obvious matter of design choice to one of ordinary skill in the art to use a lower acceleration voltage based on the desired structural modifications of the irradiated material" is without basis.

Applicant respectfully submits that Ravelosona-Ramasitera discloses generally discloses a method for enabling a material to be caused to change from one phase to a more ordered phase by irradiating a material by low energy ions having an energy of the order of one or two hundred keV. (See Ravelosona-Ramasitera, column 2, lines 9-11.) Additionally, Ravelosona-Ramasitera discloses a specific example of using "low energy ions, such as He ions accelerated in a focused ion beam with an energy 130 keV." (See Ravelosona-Ramasitera, column 4, lines 25-26.) As such, Ravelosona-Ramasitera is simply silent regarding using the claimed acceleration voltage of between 20 keV and 30 keV to obtain desired structural modifications of the irradiated material.

Further, Applicant has demonstrated above that Ravelosona-Ramasitera does not disclose or suggest the subject matter of claims 1 and 23, the respective base claims of claims 7 and 27.

Accordingly, Applicant respectfully submits that the Examiner's contention regarding claims 7 and 27 is even more tenuous than the Examiner's conclusion regarding claims 1 and 23.

Regarding the Examiner's conclusion relating to "desired structural modification of the irradiated material," Applicant respectfully submits that Ravelosona-Ramasitera is silent regarding exchange coupling. Thus, the Examiner's contention is based on nothing more than hindsight reconstruction.

Consequently, Applicant respectfully requests that the Examiner withdraw this rejection and allow claims 7 and 27.

The Rejection Under 35 U.S.C. § 103(a) Over Ravelosona-Ramasitera In View Of Baglin.

Claims 12 and 13 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Ravelosona-Ramasitera in view of Baglin et al. (Baglin), U.S. Patent No. 6,331,364.

Applicant respectfully traverses this rejection. Applicant respectfully submits that the subject matter according to claims 12 and 13 is patentable over Ravelosona-Ramasitera in view of Baglin. In particular, Applicant respectfully submits that Baglin does not cure the deficiencies of Ravelosona-Ramasitera with respect to claim 1, the base claim of both claims 12 and 13.

Consequently, Applicant respectfully requests that the Examiner withdraw this rejection.

The Rejection Under 35 U.S.C. § 103(a) Over Fullerton In View Of Fullerton In View Of Baglin.

Claims 11-13 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Fullerton in view of Baglin.

Applicant respectfully traverses this rejection. Applicant respectfully submits that the subject matter according to any of claims 11-13 is patentable over Fullerton in view of Baglin. Applicant respectfully submits that Baglin does not cure the deficiencies of Fullerton with respect to claim 1, the base claims for each of claims 11-13.

Consequently, Applicant respectfully requests that the Examiner withdraw this rejection.

Applicant respectfully notes that additional patentable distinctions between Ravelosona-Ramasitera, Fullerton, and Baglin and the rejected claims exist; however, the foregoing is believed sufficient to address the Examiner's rejections. Additionally, failure of the Applicant to respond to a position taken by the Examiner is not an indication of acceptance or acquiescence of the Examiner's position. Instead, it is believed that the Examiner's positions are rendered moot by the foregoing and, therefore, it is believed not necessary to respond to every position taken by the Examiner with which Applicant does not agree.

CONCLUSION

In view of the above amendments and arguments, it is urged that the present application is now in condition for allowance. Should the Examiner find that a telephonic or personal interview would expedite passage to issue of the present application, the Examiner is encouraged to contact the undersigned attorney at the telephone number indicated below.

It is requested that this application be passed to issue with claims 1-5, 7-25 and 27-29.

Respectfully submitted,

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